

What is claimed is:

1. An additive for fluxing and fluidizing slags in molten metal, comprising:
calcium carbonate;

5 magnesium carbonate;
alumina;
silica; and
sodium oxide.

10 2. The additive of claim 1, wherein the additive includes:
8 to 28.7% calcium carbonate;
0 to 18.5% magnesium carbonate;
3.6 to 18.0% alumina;
1.4 to 7.1% silica; and
15 19.4 to 46.4% sodium oxide, as soda ash.

3. The additive of claim 1, wherein the additive includes:
12 to 16% calcium carbonate;
11.5 to 15% magnesium carbonate;
20 8 to 14% alumina;
4.5 to 6.5% silica; and
26.1 to 31.9% sodium oxide, as soda ash.

2. 12.6 4. 5. The additive of claim 1, further comprising a release agent.

25 5. 4. The additive of claim 3, wherein the release agent includes polyglycol.

6. 5. The additive of claim 1, wherein the additive is an agglomeration.

30 7. 6. The additive of claim 1, wherein the additive is a powder.

8. ✓ A method of fluxing and fluidizing slags in molten metal, the method comprising:

adding a flux composition to the metal;
wherein the flux composition includes:

5 calcium carbonate;
 magnesium carbonate;
 alumina;
 silica; and
 sodium oxide.

10 9. ✓ The method of claim 7, wherein the adding includes adding a flux composition
that includes:

8 to 28.7% calcium carbonate;
0 to 18.5% magnesium carbonate;
15 3.6 to 18.0% alumina;
 1.4 to 7.1% silica; and
 19.4 to 46.4% sodium oxide, as soda ash.

10 10. ✓ The method of claim 7, wherein the adding includes adding a flux composition
20 that includes:

12 to 16% calcium carbonate;
11.5 to 15% magnesium carbonate;
8 to 14% alumina;
4.5 to 6.5% silica; and
25 26.1 to 31.9% sodium oxide, as soda ash.

11. ✓ 10. The method of claim 7, wherein the adding includes adding the flux
composition as an agglomeration.

30 (2) ✓ 11. The method of claim 7, wherein the adding includes adding the flux
composition as a powder.

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12. The method of claim 7, wherein the adding includes adding a bag containing the powder.

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5 13. The method of claim 7,
wherein the molten metal is in a furnace; and
wherein the adding includes putting the flux composition into the furnace.

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10 14. The method of claim 13, wherein the furnace is an electric coreless induction furnace.

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15. The method of claim 13, wherein the furnace is a vertical channel furnace that employs an inductor loop.

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15 16. The method of claim 13, wherein the furnace is a pressure pour furnace that employs an inductor loop.

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20 17. The method of claim 7,
wherein the molten metal is in a ladle; and
wherein the adding includes putting the flux composition into the ladle.

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18. The method of claim 7, wherein the adding includes adding an amount of the flux composition from 0.01 to 0.75% of the weight of the molten metal.

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25 19. The method of claim 7, wherein the adding includes adding an amount of the flux composition from 0.01 to 0.10% of the weight of the molten metal.

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20. The method of claim 7, wherein the adding includes adding an amount of the flux composition from 0.025 to 0.075% of the weight of the molten metal.

22. 21. The method of claim 7, wherein the adding includes adding an amount of the flux composition from 0.035 to 0.075% of the weight of the molten metal.